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ANALYTICAL REPORT

Job Number: 280-2628-1

Job Description: PFC Analysis

For:
Dalton Utilities
1200 V.D. Parrott Jr. Parkway
Dalton, GA 30721

Attention: Ms. Dena Haverland

Approved for release.
Elizabeth M Eichelberger
Project Manager I
6/11/2010 2:53 PM

Designee for
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Project Manager I
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06/11/2010

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

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CASE NARRATIVE
Client: Dalton Utilities
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With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Receipt

The following report contains the analytical results for one soil sample received at TestAmerica Denver on April 22, 2010, according to documented sample acceptance procedures. The sample was received in good condition at a temperature of 9.4°C.

The sample arrived at the laboratory above the recommended temperature of 4 +/- 2°C. The client was notified on April 23, 2010.

Sample AB-1 Finished Sample (280-2628-1) was collected in an improper container. The sample was collected in a Folgers container. The client was notified on April 23, 2010.

No anomalies were encountered during sample receipt.

PFC

Sample AB-1 Finished Sample (280-2628-1) was analyzed for PFC in accordance with SOP DV-LC-0012. The sample was prepared on 05/12/2010 and analyzed on 05/18/2010 and 06/05/2010.

There is no prescribed regulatory holding time requirement for PFCs. The scientific literature indicates PFCs are highly persistent compounds in the environment. TestAmerica Denver has conducted stability studies indicating medium- and low-level standard solutions of PFOA are stable for at least three months in glass, polystyrene, and polypropylene plastics at 4 +/-2°C. The 7-day/40-day and 14-day/40-day holding times listed above are based on the general EPA convention for the holding time of extractable organic compounds in water and soil. Please note the sample results should be considered estimated.

During the analysis of the original extraction, the lab noted stability problems with the instrument. The fluctuation in the response for the individual analytes was greater than normal. The original analysis also exhibited CCV failures for several compounds. The samples were re-extracted out of hold and the results from the re-extraction were more reproducible because of the improved instrument stability. The client was notified on May 24, 2010 and instructed the laboratory to report only the results from the re-extraction. As such, sample AB-1 Finished Sample (280-2628-1) was extracted outside of the recommended holding time.

Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Due to high concentrations of target analytes, sample AB-1 Finished Sample (280-2628-1) had to be analyzed at a dilution. The reporting limits have been adjusted relative to the dilution required.

Several analytes failed the recovery criteria high for the MS and/or MSD of sample AB-1 Finished Sample (280-2628-1) in prep batch 280-14989. The acceptable LCS/LCSD analyte recoveries indicated that the analytical system was operating within control. The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

No other difficulties were encountered during the PFC analysis.

All other quality control parameters were within the acceptance limits.

PERCENT SOLIDS

Sample AB-1 Finished Sample (280-2628-1) was analyzed for percent solids in accordance with EPA SW846 3550C. The samples were analyzed on 04/22/2010.

No difficulties were encountered during the % solids analysis.

All quality control parameters were within the acceptance limits.

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-2628-1

SDG No.:

Instrument ID: LC_LCMS3 Analysis Batch Number: 18619

Lab Sample ID: MB 280-14989/4-A Client Sample ID:

S. Costagno 6-11-12

Date Analyzed: 06/05/10 01:33 Lab File ID: PC30f04145.d GC Column: IonPac ID: 2(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctane Sulfonamide (FOSA)	2.79	Baseline	bonnettj	06/09/10 11:38

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-2628-1

SDG No.:

Instrument ID: LC_LCMS5 Analysis Batch Number: 15979

Lab Sample ID: STD002 280-15979/2 IC Client Sample ID:

Date Analyzed: 05/18/10 10:34 Lab File ID: pc50E18004.d GC Column: Eclipse+C18 ID:

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorotridecanoic Acid (PFTriA)	7.86	Poor chromatography	bonnettj	05/20/10 12:45

Lab Sample ID: STD005 280-15979/3 IC Client Sample ID:

Date Analyzed: 05/18/10 10:47 Lab File ID: pc50E18005.d GC Column: Eclipse+C18 ID:

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorotridecanoic Acid (PFTriA)	7.85	Poor chromatography	bonnettj	05/20/10 12:46

Lab Sample ID: STD010 280-15979/4 IC Client Sample ID:

Date Analyzed: 05/18/10 11:00 Lab File ID: pc50E18006.d GC Column: Eclipse+C18 ID:

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
MeFOSA (Surr)	7.32	Poor chromatography	bonnettj	05/20/10 12:46

Lab Sample ID: STD020 280-15979/5 IC Client Sample ID:

Date Analyzed: 05/18/10 11:13 Lab File ID: pc50E18007.d GC Column: Eclipse+C18 ID:

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1802 PFHxS	6.45	Poor chromatography	bonnettj	05/20/10 12:47
1802 PFHxS (IS)	6.45	Poor chromatography	bonnettj	05/20/10 12:47

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-2628-1

SDG No.:

Instrument ID: LC_LCMS5 Analysis Batch Number: 15979

Lab Sample ID: STD100 280-15979/7 IC Client Sample ID:

Date Analyzed: 05/18/10 11:38 Lab File ID: pc50E18009.d GC Column: Eclipse+C18 ID:

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutane Sulfonate (PFBS)	5.50	Baseline	bonnettj	05/20/10 12:55

Lab Sample ID: STD200 280-15979/8 IC Client Sample ID:

Date Analyzed: 05/18/10 11:51 Lab File ID: pc50E18010.d GC Column: Eclipse+C18 ID:

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutane Sulfonate (PFBS)	5.52	Baseline	bonnettj	05/20/10 12:55

Lab Sample ID: ICB 280-15979/9 Client Sample ID:

Date Analyzed: 05/18/10 12:04 Lab File ID: pc50E18011.d GC Column: Eclipse+C18 ID:

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorotridecanoic Acid (PFTriA)	7.84	Wrong peak	bonnettj	05/21/10 13:57

Lab Sample ID: ICV 280-15979/10 Client Sample ID:

Date Analyzed: 05/18/10 12:17 Lab File ID: pc50E18012.d GC Column: Eclipse+C18 ID:

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutane Sulfonate (PFBS)	5.51	Baseline	bonnettj	05/20/10 12:55

SAMPLE SUMMARY

Client: Dalton Utilities

Job Number: 280-2628-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-2628-1	AB-1 Finished Sample	Solid	04/21/2010 1350	04/22/2010 1000

EXECUTIVE SUMMARY - Detections

Client: Dalton Utilities

Job Number: 280-2628-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
280-2628-1	AB-1 FINISHED SAMPLE					
Perfluorobutane Sulfonate (PFBS)		520	H	27	ug/Kg	DV-LC-0012
Perfluorobutanioc acid (PFBA)		89	H	27	ug/Kg	DV-LC-0012
Perfluorodecanoic acid (PFDA)		590	H	27	ug/Kg	DV-LC-0012
Perfluorododecanoic acid (PFDoA)		150	H	68	ug/Kg	DV-LC-0012
Perfluoroheptanoic acid (PFHpA)		67	H	27	ug/Kg	DV-LC-0012
Perfluorohexane Sulfonate (PFHxS)		12	J H	27	ug/Kg	DV-LC-0012
Perfluorohexanoic acid (PFHxA)		160	H	27	ug/Kg	DV-LC-0012
Perfluorononanoic acid (PFNA)		100	H	27	ug/Kg	DV-LC-0012
Perfluorooctane Sulfonamide (FOSA)		250	H	68	ug/Kg	DV-LC-0012
Perfluorooctanoic acid (PFOA)		450	H	68	ug/Kg	DV-LC-0012
Perfluorooctane Sulfonate (PFOS)		550	H	27	ug/Kg	DV-LC-0012
Perfluoropentanoic acid (PFPA)		74	H	27	ug/Kg	DV-LC-0012
Perfluorotetradecanoic acid (PFTeA)		27	J H	68	ug/Kg	DV-LC-0012
Perfluorotridecanoic Acid (PFTriA)		110	H	68	ug/Kg	DV-LC-0012
Perfluoroundecanoic acid (PFUnA)		290	H	68	ug/Kg	DV-LC-0012
Percent Moisture		30		0.10	%	D-2216

METHOD SUMMARY

Client: Dalton Utilities

Job Number: 280-2628-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Perfluoronated Hydrocarbons	TAL DEN	TAL-DEN DV-LC-0012	
Leaching procedure for PFCs	TAL DEN		TAL-DEN PFC leach
ASTM D-2216	TAL DEN	ASTM D-2216	

Lab References:

TAL DEN = TestAmerica Denver

Method References:

ASTM = ASTM International

TAL-DEN = TestAmerica Laboratories, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

Client: Dalton Utilities

Job Number: 280-2628-1

Method	Analyst	Analyst ID
TAL-DEN DV-LC-0012	Bonnett, Jacquelyn C	JCB
TAL-DEN DV-LC-0012	Meyer, Andrew GC	AGCM
ASTM D-2216	Berry III, Paul B	PBB

Client: Dalton Utilities

Job Number: 280-2628-1

Client Sample ID: AB-1 Finished Sample

Lab Sample ID: 280-2628-1

Client Matrix: Solid

% Moisture: 30.1

Date Sampled: 04/21/2010 1350

Date Received: 04/22/2010 1000

DV-LC-0012 Perfluoronated Hydrocarbons

Method:	DV-LC-0012	Analysis Batch: 280-15980		Instrument ID:	LC_LCMS5
Preparation:	PFC leach	Prep Batch: 280-14989		Lab File ID:	pc50E18015.d
Dilution:	10			Initial Weight/Volume:	10.55 g
Date Analyzed:	05/18/2010 1255			Final Weight/Volume:	50 mL
Date Prepared:	05/12/2010 0900			Injection Volume:	30 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Perfluorobutane Sulfonate (PFBS)		520	H	11	27
Perfluorobutanioc acid (PFBA)		89	H	4.6	27
Perfluorodecanoic acid (PFDA)		590	H	10	27
Perfluorododecanoic acid (PFDoA)		150	H	11	68
Perfluoroheptanoic acid (PFHpA)		67	H	9.8	27
Perfluorohexane Sulfonate (PFHxS)		12	J H	10	27
Perfluorohexanoic acid (PFHxA)		160	H	2.7	27
Perfluorononanoic acid (PFNA)		100	H	6.8	27
Perfluorooctanoic acid (PFOA)		450	H	14	68
Perfluorooctane Sulfonate (PFOS)		550	H	5.1	27
Perfluoropentanoic acid (PFPA)		74	H	12	27
Perfluorotetradecanoic acid (PFTeA)		27	J H	20	68
Perfluorotridecanoic Acid (PFTriA)		110	H	16	68
Perfluoroundecanoic acid (PFUnA)		290	H	25	68

Surrogate	%Rec	Qualifier	Acceptance Limits
13C4 PFOA	91		50 - 200
13C4 PFOS	95		50 - 200
13C4 PFBA	105		50 - 200
13C2 PFHxA	91		50 - 200
13C5 PFNA	97		50 - 200
13C2 PFDA	93		50 - 200
13C2 PFUnA	99		50 - 200
13C2 PFDoA	89		50 - 200
18O2 PFHxS	96		50 - 200

Client: Dalton Utilities

Job Number: 280-2628-1

Client Sample ID: **AB-1 Finished Sample**

Lab Sample ID: 280-2628-1

Client Matrix: Solid

% Moisture: 30.1

Date Sampled: 04/21/2010 1350

Date Received: 04/22/2010 1000

DV-LC-0012 Perfluoronated Hydrocarbons

Method:	DV-LC-0012	Analysis Batch: 280-18619		Instrument ID:	LC_LCMS3
Preparation:	PFC leach	Prep Batch: 280-14989		Lab File ID:	PC30f04147.d
Dilution:	10			Initial Weight/Volume:	10.55 g
Date Analyzed:	06/05/2010 0143			Final Weight/Volume:	50 mL
Date Prepared:	05/12/2010 0900			Injection Volume:	20 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Perfluorooctane Sulfonamide (FOSA)		250	H	17	68

Client: Dalton Utilities

Job Number: 280-2628-1

General Chemistry

Client Sample ID: **AB-1 Finished Sample**

Lab Sample ID: 280-2628-1
Client Matrix: Solid

Date Sampled: 04/21/2010 1350
Date Received: 04/22/2010 1000

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	30		%	0.10	0.10	1.0	D-2216

Analysis Batch: 280-11985 Date Analyzed: 04/22/2010 1430 DryWt Corrected: N